

From gjones@tenet.edu Thu Jun 30 13:29:33 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA145486 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Thu, 30 Jun 94 13:29:33 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id NAA03579 for tapr-bb@tcet.unt.edu; Thu, 30 Jun 1994 13:29:49 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406301829.NAA03579@Kay-Abernathy.tenet.edu>

Subject: FCC HF Digital NPRM

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Thu, 30 Jun 1994 13:29:49 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 14394

Status: RO

Before the
Federal Communications Commission
Washington, D.C. 20554

PR Docket No. 94-59
RM-8218
RM-8280

In the Matter of

Amendment of Part 97 of the
Commission's Rules Concerning
HF Digital Communications in the
Amateur Service.

NOTICE OF PROPOSED RULE MAKING

Adopted: June 13, 1994
Released: June 23, 1994

Comment Date: October 1, 1994
Reply Comment Date: November 1, 1994

By the Commission: Commissioners Ness and Chong not
participating.

I. INTRODUCTION

1. In this Notice of Proposed Rule Making (Notice), we propose to amend the amateur service rules to authorize automatic control[1] of stations transmitting a digital emission on the High Frequency (HF) amateur service bands.[2] This proceeding was initiated by two petitions for rule making.[3]

I1. BACKGROUND

2. The propagation characteristics of the HF bands[4] allow for long distance communications. Amateur operators take advantage of these characteristics to communicate with other amateur stations, particularly with those in other countries. Establishing and maintaining a HF communications link, however, presents operating demands not encountered on the Very-High Frequency (VHF) and higher frequency bands frequencies above 30 MHz. The variables affecting communications in the HF bands are highly complex. To maintain the communications link and avoid causing interference to the communications of other amateur stations, the control operator constantly monitors the activity on the channel being used and adjusts the station's transmitting parameters as needed. Because the presence of the control operator has been imperative for proper operation in such systems, automatic control of an amateur station that is transmitting on an HF band has not been authorized.[5]

3. In 1986, however, automatic control of amateur stations transmitting digital communications[6] on the VHF and higher frequency bands was authorized.[7] In the same proceeding, the Commission indicated an interest in also authorizing automatic control of amateur stations transmitting digital communications in the HF band. In this regard, the Commission noted that a feasibility study planned by The American Radio Relay League, Inc. (ARRL) would be helpful in determining if any rule changes were necessary to prevent interference to and from other amateur service communication.[8] The ARRL's petition is the result of that study.

I11. DISCUSSION

4. According to the ARRL, its project was carried out under Special Temporary Authority we granted to some fifty amateur stations. It states that these stations were assembled as an automated digital communication system on the 20 meter HF band based upon the packet radio protocol used generally by amateur stations on the VHF bands.[9] Based on the experience gained managing this system, the ARRL concludes that the only regulatory safeguard needed to prevent interference to other stations is to restrict those stations that engage in automatically controlled station transmissions to specific subbands within the eight HF bands where data and RTTY emission types may be transmitted. The ARRL believes that this approach will provide advance notice to other amateur operators that they may receive interference to their communications from automatically controlled stations should they attempt to operate their stations in these subbands.[10] The ARRL recommends that the subbands be those it has coordinated

with other amateur radio societies in North and South America.[11]

5. In its petition, the American Digital Radio Society (ADRS) states that it also believes that automatic control in the HF bands is workable[12] as long as proper safeguards for other users of these bands are included.[13] It agrees that communications between automatically controlled stations should be confined to the ARRL-recommended subbands.[14] The ADRS also recommends, however, that communications between a locally or remotely controlled station and an automatically controlled station should be permitted on any frequency authorized for data and RTTY emission types.[15] It argues that the potential for interference is much less from stations operating in this configuration because the control operator of the locally or remotely controlled station can terminate the transmissions from all the stations. In its comments, the ARRL supported the ADRS petition.[16]

6. We are gratified by the cooperation and dedication of organizations within the amateur service community in determining the conditions necessary to allow automatic control of stations transmitting data and RTTY emission types on the HF amateur service bands. We concur with the petitioners that automatic control of amateur stations in the HF bands can, with the safeguards recommended, make the transmission of data and RTTY emission types practical and effective.[17] Also like the petitioners, we believe that the potential for interference to the communications of other amateur stations will be mitigated by rules based upon their recommendations. We propose, therefore, to authorize automatic control for stations transmitting data and RTTY emission types on the subbands recommended by the ARRL. We also propose to authorize communications between a locally or remotely controlled station and an automatically controlled station on any frequency where data and RTTY emission types are otherwise authorized.[18] These proposed rules are intended to facilitate the development of digital communications on the HF amateur service bands. We request comments on these proposals.

IV. CONCLUSION

7. We firmly believe in the principle that government should be responsive to user needs.[19] The rules that we are proposing are the result of a successful feasibility project planned and carried out within the amateur service community. They are responsive to the recommendations of two organizations dedicated to bringing the benefits to be derived from the transmission of digital communications on the amateur service HF bands to amateur operators in the United States and elsewhere without causing unnec-

essary interference to other types of communications.

V. PROCEDURAL MATTERS

Ex Parte Rules - Non-Restricted Proceeding

8. This is a non-restricted notice and comment rule making proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission Rules. See generally 47 C.F.R. 1.1202, 1.1203, and 1.1206(a).

Regulatory Flexibility Act

9. We certify that the Regulatory Flexibility Act of 1980 does not apply to this rule making proceeding because if the proposed rule amendments are promulgated, there will not be any significant economic impact on small business entities, as defined by Section 601(3) of the Regulatory Flexibility Act. The amateur service may not be used to transmit communications for compensation, for the pecuniary benefit of the station control operator or the station control operator's employer, or for business communications on a regular basis. See 47 C.F.R. 97.113(a). The Secretary shall send a copy of this Notice of Proposed Rule Making, including the certification, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 605(b) of the Regulatory Flexibility Act, Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. 601-612 (1981).

Comment Dates

10. Authority for issuance of this Notice is contained in Sections 4(i), 303(b), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 303(b), (g), and (r). Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. 1.415 and 1.419, interested parties may file comments on or before October 1, 1994, and reply comments on or before November 1, 1994. To file formally in this proceeding, you must file an original and five copies of all comments, and reply comments. To file informally, you must file an original and one copy of your comments, provided only that the Docket Number is specified in the heading. You should send comments and reply comments to: Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239) of the Federal Communications Commission, 1919 M Street, N. W., Washington, D.C. 20554.

11. For further information, contact William T. Cross,
Personal Radio Branch, Private Radio Bureau, (202)
632-4964.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX

Part 97 of Chapter I of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

1. The authority citation for Part 97 would continue to read as follows:

Authority citation: 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. 151-155, 301-609, unless otherwise noted.

2. Section 97.109 is amended by revising paragraphs (d) and (e) to read as follows:

97.109 Station control.

(d) When a station is being automatically controlled, the control operator need not be at the control point. Only stations specifically designated elsewhere in this Part may be automatically controlled. Automatic control must cease upon notification by an EIC that the station is transmitting improperly or causing harmful interference to other stations. Automatic control must not be resumed without prior approval of the EIC.

(e) No station may be automatically controlled while transmitting third party communications, except a station transmitting a RTTY or data emission. All messages that are retransmitted must originate at a station that is being locally or remotely controlled.

3. Subpart C of Part 97 is amended by adding new Section 97.221 to read as follows:

97.221 Automatically controlled digital station.

(a) This rule section does not apply to an auxiliary station, a beacon station, a repeater station, an earth station, a space station, or space telecommand station.

(b) A station may be automatically controlled while

transmitting RTTY or data emissions on the 6 m or shorter wavelength bands, and on the 28.120-28.189 MHz, 24.925-24.930 MHz, 21.090-21.100 MHz, 18.105-18.110 MHz, 14.0950-14.0995 MHz, 14.1005-14.112 MHz, 10.140-10.150 MHz, 7.100-7.105 MHz, or 3.620-3.635 MHz segments.

(c) A station may be automatically controlled while transmitting a RTTY or data emission on any other frequency authorized for such emission types provided that:

(1) The station is responding to interrogation by a station under local or remote control: and

(2) No transmission from the automatically controlled station occupies a bandwidth of more than 500 Hz.

FOOTNOTES

[1] Section 97.3(a) of the Commission's Rules, 47 C.F.R. 97.3(a), defines automatic control as the use of devices and procedures for control of a station when it is transmitting so that compliance with the Commission's Rules is achieved without the control operator being present at a control point. Only stations specifically designated in the rules may be automatically controlled.

[2] Section 97.3(c) of the Commission's Rules, 47 C.F.R. 97.3(c), authorizes amateur stations to use any of eighteen data and RTTY emission types when transmitting digital communications. The nine data emission types enable amateur stations to transmit telemetry, telecommand, and computer communications. The nine RTTY emission types enable amateur stations to transmit narrow-band direct-printing telegraphy communications.

[3] RM-8218 was filed by The American Radio Relay League, Inc., (ARRL). RM-8280 was filed by the American Digital Radio Society, Inc., (ADRS). The ARRL also filed comments strongly supporting RM-8280.

[4] Of the nine frequency segments allocated to the amateur service in the HF (3-30 MHz) portion of the radio spectrum, data and RTTY digital emissions may be transmitted on all but the 75 meter band (3.75-4.00 MHz.)

[5] The rules applicable to amateur service message forwarding systems were revised effective June 1, 1994, in PR Docket No. 93-85. See Report and Order, PR Docket No. 93-85. 9 FCC Rcd 1786 (1994). These revisions, however, did not authorize automatic control of stations transmitting on the HF bands. See

also, Public Notice, Report No. DC-2605, June 2, 1994.

[6] Automatic control of digital communications allows amateur operators to utilize high-speed computer-based message technology for the rapid and accurate relaying of messages and data.

[7] See Report and Order, PR Docket No. 85-105, 51 Fed. Reg. 3069 (1986).

[8] See Memorandum Opinion and Order, PR Docket No. 85-105, 1 FCC Rcd 166 (1986).

[9] The protocol was the American Radio Relay League, Inc. AX.25 Amateur Packet-Radio Link-Layer Protocol, Version 2.0, October 1984.

[10] ARRL petition at 18-19.

[11] ARRL petition at 15-16.

[12] ADRS petition at 1-2. ADRS members are Commission-licensed amateur radio operators interested primarily in developing digital communications technology.

[13] ADRS petition at 6.

[14] ADRS petition at 11.

[15] ADRS petition at 10-11.

[16] Comments of the ARRL in Response to RM-8280 at 8.

[17] Other examples of designated subbands to minimize interference include subbands for repeater stations, Section 97.205(b) of the Commission's Rules, 47 C.F.R. 97.205(b), and a weak-signal subband recently established at 220.00-222.15 MHz. See Report and Order PR Docket No. 92-289, 8 FCC Rcd 8428 (1993).

[18] Stations are authorized to transmit a RTTY or data emission on frequency segments specified in Section 97.305(c) of the Commission's Rules, 47 C.F.R. 97.305(c). On the HF bands, these subbands are separate from the subbands where analog emission types are authorized.

[14] Vice President Al Gore, Report of the National Performance Review, From Red Tape to Results: Creating a Government That Works Better and Costs Less, at 6-8 (1993). The Vice President's Report stresses putting people first. Serving customers and cutting costs are two of its key principles. This Notice embraces these principles by seeking ways to allow amateur service licensees to use efficient technologies that are now available so that they can operate their stations in the manner

they desire.

From gjones Tue Jun 28 22:49:26 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0)
id AA131508 (for tapr-bb, from gjones/gjones); Tue, 28 Jun 94 22:49:26 -0500
From: gjones (Greg Jones)
Message-Id: <9406290349.AA131508@tcet.unt.edu>
Subject: ARRL DCC '94
To: tapr-bb
Date: Tue, 28 Jun 94 22:49:25 CDT
X-Mailer: ELM [version 2.4dev PL17]
Status: R0

>From: Rick_Whiting@ATK.COM (Rick Whiting)
Newsgroups: rec.radio.amateur.digital.misc
Subject: ARRL Digital Conference
Date: 28 Jun 94 21:19:16 GMT

	Subject:	Time:3:13 PM
OFFICE MEMO	ARRL Digital Conference	Date:6/28/94

The deadline for submission of papers for publication in the Proceedings of the 13th annual ARRL Conference on Digital Communications has been extended to July 5, 1994. Papers should be submitted to: Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via Internet to lweinber@arrl.org. It is not necessary to present the paper at the Conference for the paper to be published in the Proceedings.

So, if you haven't already done so, put your fingers to the keyboard and write-up your software and hardware developments, experimental results, ideas, theories, philosophy, etc., to share with the digital communications community.

The ARRL Digital Conference will be held August 19-21, 1994, at the Thunderbird Hotel and Conference Center in Bloomington, MN, U.S.A. (near the Minneapolis International Airport). The main Conference presentations will be on Saturday August 20. In addition to the presentation of papers, six forums are planned covering digital data methods, DSP developments, HF data methods, TCP/IP developments, ARRL Committee updates, and high speed data transfer.

For more information call Cathy Thomas at 1-800-726-6715 or write to ARRL Digital Conference, Paul Ramey WG0G, 16266 Finland Ave., Rosemount, MN 55068, U.S.A.

73 de Rick W0TN <rick_whiting@atk.com>

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From gjones@tenet.edu Thu Jun 23 04:08:02 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with

SMTP

id AA156321 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Thu, 23 Jun 94 04:08:02 -0500
Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id EAA07849 for tapr-bb@tcet.unt.edu; Thu, 23 Jun 1994 04:08:21 -0500
From: Greg Jones <gjones@tenet.edu>
Message-Id: <199406230908.EAA07849@Kay-Abernathy.tenet.edu>
Subject: PSR Deadline
To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)
Date: Thu, 23 Jun 1994 04:08:21 -0500 (CDT)
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 269
Status: R0

PSR Deadline is July 4th.

The Packet Status Register is still looking for regional organizations to publish status articles on their activities.

In addition, PSR is looking for any technical or project related articles or stories.

Send articles to psr@tapr.org.

From gjones@tenet.edu Sat Jun 18 11:19:54 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP
id AA114943 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Sat, 18 Jun 94 11:19:54 -0500
Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id LAA23551; Sat, 18 Jun 1994 11:20:17 -0500
From: Greg Jones <gjones@tenet.edu>
Message-Id: <199406181620.LAA23551@Kay-Abernathy.tenet.edu>
Subject: TAPR SIG Archives
To: tapr-bb@tcet.unt.edu (TAPR-BB mailing),
netsig@tcet.unt.edu (NETSIG mailing),
bbssig@tcet.unt.edu (BBSIG mailing)
Date: Sat, 18 Jun 1994 11:20:16 -0500 (CDT)
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 122
Status: R0

The TAPR SIG mail exchange archives are being made available via FTP access.

system: tcet.unt.edu

directory: tapr/SIG

From gjones@tenet.edu Sat Jun 18 11:06:45 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA114846 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Sat, 18 Jun 94 11:06:45 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id LAA22949 for tapr-bb@tcet.unt.edu; Sat, 18 Jun 1994 11:07:07 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406181607.LAA22949@Kay-Abernathy.tenet.edu>

Subject: ARRL 1994 Digital Conference

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Sat, 18 Jun 1994 11:07:06 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 4975

Status: R0

1994 Digital Conference - Deadline Monday.

CALL FOR PAPERS:

Anyone interested in digital communications is invited to submit a formal paper for publication in the conference Proceedings. Presentation at the conference is not required for publication. Papers are due by June 20 and should be submitted to Maty Weinberg, ARRL, 225 Main St., Newington, CT 06111 or via Internet at lweinber@arrl.org. A schedule for presentation of papers will be available in early July.

Although papers are typically taken up to a few days after the deadline.

Forwarded message:

>From: ESTEY@SKYLER.MAVD.HONEYWELL.COM

Date: Sun, 16 Jan 1994 22:18:40 -0600 (CST)

>From: Mike Stapp KE0WW FOR IMMEDIATE RELEASE
TwinsLAN Amateur Radio Club
h 612 823-2351
w 612 951-0232
fax 612 951-2333
packet KE0WW@WA0CQG.#MSP.MN.USA.NA

ARRL NATIONAL DIGITAL CONFERENCE 1994 ANNOUNCED

MINNEAPOLIS, JANUARY 12 -- The TwinsLAN ARC today announced that it will sponsor the 1994 ARRL National Digital Communications Conference on August 19 through 21 at the Thunderbird Hotel and Conference Center in Bloomington, MN. The theme for this year's conference is "Digital

Communications - Amateur Radio of Today...and the Future".

The objective of the conference is to create a forum for radio amateurs and experts in digital communications to meet, publish their work and present new ideas and techniques for discussion. Presenters and attendees will have opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. Areas of interest include generation, coding, modulation and demodulation, transmission, networking, processing, presentation and application of voice, text, image and data information.

The conference site is located near the Minneapolis/St. Paul International Airport, just off Interstate I-494. Free 24-hr shuttle service is available to and from the airport.

AGENDA:

The agenda for the three-day event includes informal activities for attendees and family members on Friday, August 19 through noon Sunday, August 21. Formal conference activities, including presentation of papers and six forums are scheduled for Saturday, August 20, from 8:30 am to 5 pm. A detailed agenda will be available when schedules are finalized.

CALL FOR PAPERS:

Anyone interested in digital communications is invited to submit a formal paper for publication in the conference Proceedings. Presentation at the conference is not required for publication. Papers are due by June 20 and should be submitted to Maty Weinberg, ARRL, 225 Main St., Newington, CT 06111 or via Internet at lweinber@arrl.org. A schedule for presentation of papers will be available in early July.

ACCOMMODATIONS:

On-site accommodations are available at a special rate of \$67 (plus tax) for single occupancy or \$73 (plus tax) for double occupancy. Make reservations directly with the Thunderbird Hotel at 800 328-1931 before July 29 for these special rates. Be sure to mention you are attending the National Digital Communications Conference. Off-site accommodations are available in the area starting at \$39.95. Contact the NDCC Info Line for a list of facilities. Early reservations are encouraged. A list of area campgrounds for RVs is also available. Northwest Airlines is offering an additional 5% discount on airfare to and from the Twin Cities for conference attendees. Call the NDCC Info Line for details.

A FAMILY WEEKEND:

Family participation in the NDCC is encouraged. The hotel has a large pool for guests. Informal outings are planned to the Minnesota Zoo (admission extra) and the Mall of America, the largest indoor shopping mall in the US. Free scheduled shuttle service is also available from the conference center to the Mall. Minnesota is a great place to visit in August. Consider making this weekend an addition to your family vacation plans. Twin Cities and Minnesota tourist information packets are available on request to the NDCC Info Line.

REGISTRATION:

The conference registration fee is \$45 per person, which includes a luncheon buffet, a set of conference papers (including those submitted but not presented) and transportation to the Mall of America on Saturday evening. Registration, by check payable to "TwinsLAN Conference", must be received by August 12. Mail your registration form and check to:

1994 National Digital Communications Conference
c/o Paul Ramey WG0G
16266 Finland Ave.
Rosemount, MN 55068

ADDITIONAL INFORMATION:

Contact Paul Ramey at the NDCC Info Line, 612 432-1149 (evenings and weekends) or Carl Estey via Internet e-mail at estey@skyler.mavd.honeywell.com.

From gjones@tenet.edu Wed Jun 15 15:22:50 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA120189 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Wed, 15 Jun 94 15:22:50 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id PAA05998 for tapr-bb@tcet.unt.edu; Wed, 15 Jun 1994 15:23:14 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406152023.PAA05998@Kay-Abernathy.tenet.edu>

Subject: HOT!!! FCC Acts on HF Digital Auto Control (fwd)

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Wed, 15 Jun 1994 15:23:13 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 4900

Status: RO

According to ad7i@hogpa.ho.att.com:

Date: Wed, 15 Jun 94 13:33:21 EDT

Organization: Tucson Amateur Packet Radio

Subject: HOT!!! FCC Acts on HF Digital Auto Control

!!
!!
!!

Report No. DC-2613 ACTION IN DOCKET CASE June 15, 1994

AUTHORIZATION OF AUTOMATIC CONTROL FOR HF DIGITAL COMMUNICATIONS
IN AMATEUR SERVICE PROPOSED
(PR DOCKET 94-59)

The Commission has proposed amending the amateur service rules to authorize automatic control of stations transmitting a digital emission on the High Frequency (HF) amateur service bands.

This action was requested in petitions filed by The American Radio Relay League, Inc. (ARRL), and the American Digital Radio Society, Inc. (ADRS)

The propagation characteristics of the HF bands allow for long distance communications. Amateur operators take advantage of these characteristics to communicate with other amateur stations all over the world. Establishing and maintaining a HF communications link, however, presents operating demands not encountered on the Very High Frequency (VHF) and higher frequency bands. The variables affecting communications in the HF bands are highly complex. To maintain the communications link and avoid causing interference to the communications of other amateur stations, the control operator constantly monitors the activity on the channel being used and adjusts the station's transmitting parameters as needed. Because the presence of the control operator has been necessary for proper operation in these systems, automatic control of an amateur station that is transmitting on any HF band or on the 160 meter MF (medium frequency) band has not been authorized.

In 1986 the Commission authorized automatic control of amateur stations transmitting digital communications on the VHF and higher frequency bands and indicated it was interested in authorizing automatic control of stations using the HF bands.

To determine solutions to the problem of avoiding interference from automatically controlled HF digital stations the ARRL conducted a successful feasibility project under special temporary authority the Commission granted to 50 amateur stations. The ARRL's petition is based on the results of that study. The ADRS's petition contained an additional recommendation from amateur operators who have been experimenting for several decades with digital communications on the HF bands.

The Commission said it was gratified by the cooperation and dedication of organizations within the amateur service community in determining the conditions necessary to allow automatic control of stations transmitting data and RTTY (narrow-band direct printing) emission types on the HF amateur service bands. It agreed with the petitioners that automatic control of amateur stations in the HF bands can, with safeguards, make the transmission of data and RTTY emission types practical and effective.

Therefore, the Commission proposed to authorize automatic control for stations transmitting data and RTTY emission types on one specific subband of each HF band where such emissions are authorized. It also proposed to authorize communications between a locally or remotely controlled station and an automatically controlled station on any frequency where data and RTTY emission types are otherwise authorized.

The Commission said that it firmly believes in the principle that government should be responsive to user needs. It noted that the rules it proposed were the result of a successful feasibility project planned and carried out within the amateur service community and represent the recommendations of two organizations dedicated to bringing the benefits to be derived from the transmission of digital communications on the amateur service HF bands to amateur operators in the United States and elsewhere without causing unnecessary interference to other types of communications.

Action by the Commission June 13, 1994, by Notice of Proposed Rulemaking (FCC 94-171). Chairman Hundt, Commissioners Quello and Barrett, with Commissioners Ness and Chong not participating.

- FCC -

News Media contact: Rosemary Kimball at (202) 418-0500.

Private Radio Bureau contact: William T. Cross at (202) 632-4964.

From gjones@tenet.edu Tue Jun 14 21:54:02 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Gayle-Gaston.tenet.edu with SMTP
id AA196148 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Tue, 14
Jun 94 21:54:02 -0500
Received: (from gjones@localhost) by Gayle-Gaston.tenet.edu (8.6.7/8.6.6) id
VAA03197 for tapr-bb@tcet.unt.edu; Tue, 14 Jun 1994 21:54:26 -0500
From: Greg Jones <gjones@tenet.edu>
Message-Id: <199406150254.VAA03197@Gayle-Gaston.tenet.edu>
Subject: TRACK-BOX
To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)
Date: Tue, 14 Jun 1994 21:54:26 -0500 (CDT)
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 658
Status: R0

Date: 6/14/94
Re: TAPR TrackBox

TAPR is now out of TrackBox units.

The TAPR board is looking over two possible designs to replace the older units. No timeline as to when these will be made available as kits or which will be chosen as a final design.

More information will appear later this year in the PSR.

Greg

President -- Tucson Amateur Packet Radio Corp

TAPR Office (817) 383-0000 | Internet: gjones@tenet.edu

From gjones@tenet.edu Mon Jun 13 01:49:56 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA148397 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Mon, 13 Jun 94 01:49:56 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id BAA02313 for tapr-bb@tcet.unt.edu; Mon, 13 Jun 1994 01:50:22 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406130650.BAA02313@Kay-Abernathy.tenet.edu>

Subject: TAPR PSK Kit

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Mon, 13 Jun 1994 01:50:22 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 1130

Status: R0

Just when you thought you would never be able to acutally have the experience of building your own TAPR PSK modem :-) we have three kits available for those that want to relive the experience.

TAPR discontinued this kit the first of this year; however, Cathy Green, our kit builder, discovered 2 board sets and with the return of an unbuilt unit, TAPR has 3 kits availble.

Just drop Dorothy a call or fax at the office. First come basis.

Cheers - Greg

P.S. The disclaimer:

This kit is not for everyone. The TAPR PSK modem kit was one of the most difficult kits that TAPR has done. A number of builders never got their units fully operational on the satellites, although a great many were completely successful.

Tucson Amateur Packet Radio Corp

TAPR Office (817) 383-0000 | Internet: tapr@tapr.org

TAPR Fax (817) 566-2544

From gjones@tenet.edu Tue Jun 7 02:13:14 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA179040 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Tue, 7 Jun 94 02:13:14 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id CAA19309 for tapr-bb@tcet.unt.edu; Tue, 7 Jun 1994 02:13:39 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406070713.CAA19309@Kay-Abernathy.tenet.edu>

Subject: TAPR Tech Support

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Tue, 7 Jun 1994 02:13:38 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 2322

Status: RO

TAPR is looking for more people to participate in our Technical Support Group. This group handles the day to day questions the office receives about technical issues. It is important that we get some more people involved, so that we do not burn out some of our current volunteers.

Technical support for all TAPR kits and projects are supported by volunteers. The more volunteers we have helping, the better TAPR can help folks with their problems.

We are looking for additional help in the following areas:

TAPR 9600 baud modem kit

DevMeter kits

TNC problems and upgrades

and General Packet Questions (beginning to intermediate in nature).

If you think you might like to help work with folks on their problems, please send email to tapr@tapr.org stating what you can help with. Providing this help, takes maybe 30minutes to an hour a week depending on the area and the amount of questions we are getting in. The more people we have involved in each area, the less time everyone in a specific group spends on correspondence. You can also be in more than one area if you want. If you have another area you feel you would like to cover, please pass that along to us. We can then make a note of that and use you when andif we get a question in that area.

We are also looking for a technical support group manager to help coordinate the followup on technical issues within TAPR. If you think you might be interested in this, please e-mail tapr@tapr.org I can cover the responsibilities in later e-mails.

Most technical help and questions are received by mail and phone calls. When someone asks TAPR for technical help or to answer a question the office

forwards the request to someone on the technical help list. The volunteer then answers the questions by phone (many times by making a collect call) or by writing a mail (US type) in reply. (most amateurs asking for help are not on commercial e-mail services or they would be asking there :-)

In addition, we are on the lookout for any regional elmer groups that we can pass out. We have several lists for some sections of a few states, but we are looking for more. Local elmers are sometimes the best solution to any question or problem. This also applies to any regional packet groups that might be doing the same thing.

Cheers - Greg

From postmaster@iconet.Ico.Olivetti.Com Sat Jun 4 18:25:43 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from olivea.atc.olivetti.com with SMTP

id AA116422 (for tapr-bb, from postmaster@iconet.Ico.Olivetti.Com/
postmaster@iconet.Ico.Olivetti.Com); Sat, 4 Jun 94 18:25:43 -0500

Received: by olivea.ATC.Olivetti.Com (5.65/1.34)

id AA10174; Sat, 4 Jun 94 16:25:55 -0700

From: postmaster@iconet.Ico.Olivetti.Com

Received: from iconet.Ico.Olivetti.Com by olivea.ATC.Olivetti.Com (4.1/SMI-4.1)

id AA10171; Sat, 4 Jun 94 16:25:51 PDT

Message-Id: <9406042325.AA10171@olivea.ATC.Olivetti.Com>

Date: Sun, 5 Jun 94 01:25:43

To: @olivea:tapr-bb@tcet.unt.edu

Subject: smtp mail failed

Content-Type: text

Content-Length: 2062

Status: R0

Your mail to xsfi1 is undeliverable.

----- diagnosis -----

----- unsent mail -----

>From tcet.unt.edu!tapr-bb Sun Jun 5 01:25:29 1994 remote from iconet

>From tapr-bb Sat Jun 4 18:24:41 CDT 1994 remote from tcet.unt.edu

Received: from tcet.unt.edu by iconet.Ico.Olivetti.Com;

Received: from tcet.unt.edu by olivea.ATC.Olivetti.Com (4.1/SMI-4.1)

id AA10043; Sat, 4 Jun 94 16:25:11 PDT

Received: by tcet.unt.edu (5.61-AIX-1.2/1.0)

id AA116215 (for angelini@xsfi1.IC0.OLIVETTI.COM, from tapr_bb/
tapr_bb@tcet.unt.edu); Sat, 4 Jun 94 18:24:41 -0500

Received: by tcet.unt.edu (5.61-AIX-1.2/1.0)

id AA116215 (for angelini@xsfi1.IC0.OLIVETTI.COM, from tapr_bb/
tapr_bb@tcet.unt.edu); Sat, 4 Jun 94 18:24:41 -0500

>From: tapr_bb@tcet.unt.edu (TAPR Information Distribution)

Message-Id: <9406042324.AA116215@tcet.unt.edu>

Subject: GPS buy Motorola GPS engine purchase information

To: angelini@xsfi1.IC0.OLIVETTI.COM

Date: Sat, 4 Jun 94 18:24:41 CDT
Reply-To: "TAPR Information Distribution" <tapr-bb@tcet.unt.edu>
X-Mailer: ELM [version 2.4dev PL17]
Content-Type: text
Content-Length: 9455

>From: "Alan P. Biddle" <BIDDLEAP@ctrvax.Vanderbilt.Edu>
Subject: GPS buy
To: tapr-bb@tcet.unt.edu
Date: Sat, 04 Jun 1994 17:12:38 -0500 (CDT)

[Alan has asked for help with this. If you have comment, please mail
back to Paul and not the tapr-bb group.]

===

A while back, there was a brief offer of a group purchase of a GPS system,
quickly withdrawn. The following came off K0-23, and is indeed on many
Internet news groups. It looks interesting, but does anyone have any
thoughts on this, or the person offering the deal?

Thanks,

Alan

>From: bonomo@specxn.enet.dec.com
Newsgroups: rec.radio.amateur.space
Subject: Motorola GPS engine purchase information
Message-ID: <1994May25.182204.12821@nntpd2.cxo.dec.com>
Date: 25 May 94 18:22:04 GMT
Sender: usenet@nntpd2.cxo.dec.com (USENET News System)
Reply-To: bonomo@specxn.enet.dec.com ()
Organization: Digital Equipment Corporation
Lines: 352
X-Newsreader: mxrn 6.18-10

From BIDDLEAP@ctrvax.Vanderbilt.Edu Sat Jun 4 17:15:05 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from ctrvx1.Vanderbilt.Edu with SMTP
id AA115440 (for tapr-bb, from BIDDLEAP@ctrvax.Vanderbilt.Edu/
BIDDLEAP@ctrvax.Vanderbilt.Edu); Sat, 4 Jun 94 17:15:05 -0500
Received: from ctrvax.Vanderbilt.Edu by ctrvax.Vanderbilt.Edu (PMDF V4.2-15
#3899) id <01HD5H6K0G008WWUG6@ctrvax.Vanderbilt.Edu>; Sat,
4 Jun 1994 17:12:38 CDT
Date: Sat, 04 Jun 1994 17:12:38 -0500 (CDT)
From: "Alan P. Biddle" <BIDDLEAP@ctrvax.Vanderbilt.Edu>
Subject: GPS buy
To: tapr-bb@tcet.unt.edu
Message-Id: <01HD5H6K1J8Y8WWUG6@ctrvax.Vanderbilt.Edu>
X-Vms-To: @TAPR-BB
Mime-Version: 1.0
Content-Transfer-Encoding: 7BIT

Status: R0

[Alan has asked for help with this. If you have comment, please mail
back to Paul and not the tapt-bb group.]

===

A while back, there was a brief offer of a group purchase of a GPS system, quickly withdrawn. The following came off K0-23, and is indeed on many Internet news groups. It looks interesting, but does anyone have any thoughts on this, or the person offering the deal?

Thanks,

Alan

>From: bonomo@specxn.enet.dec.com
Newsgroups: rec.radio.amateur.space
Subject: Motorola GPS engine purchase information
Message-ID: <1994May25.182204.12821@nntpd2.cxo.dec.com>
Date: 25 May 94 18:22:04 GMT
Sender: usenet@nntpd2.cxo.dec.com (USENET News System)
Reply-To: bonomo@specxn.enet.dec.com ()
Organization: Digital Equipment Corporation
Lines: 352
X-Newsreader: mxrn 6.18-10

Greetings, one and all!

This message is ASCII text, formatted as <CR> at =<78 characters, tabs at +8.

Have finally received "everything" which I will obtain from Motorola and Trimble, and the order requests have dwindled to a minimum, I have attached the specifications and pricing below.

In a nutshell, the Motorola unit is better in every way, excepting three factors. The Trimble unit:

- 1) is about 1/8" smaller in width and height,
- 2) is about .6 ounce lighter,
- 3) consumes less power in standby, quoted as ~2uA nominal, versus the Motorola's stated maximum of 60uA.

Other than that, the Motorola VP Oncore engine is superior in all ways, including price. The recommendation, from my perspective, is to choose the Motorola unit, but your choice may vary. The above factors, in which the Trimble unit is superior, may be significant ones for you.

I have had requests from 375 individuals, from nine countries, for over 435 units. All this is, of course, based on a "\$150" purchase price, which is not available.

Understanding this, it seems best if there is a "standard" configuration which is ordered, as the pricing given is for quantities of 100 and greater. If 100+ want the options, we'll order those, too. Remember, all prices are for 100+ units per item. In other words, if 25 units are wanted with the LNA option, the pricing for that LNA option will be somewhat higher than the figure quoted below, and I'm not sure if Motorola can (or will) handle one-sie, two-sies and get it right.

The recommended "standard" configuration:

Item	Price / each (includes Colorado State sales tax)
VP Oncore engine	\$268
Active Antenna	\$ 70
Cable to antenna	\$ 22

Total "standard"	\$360

Options to be considered:

LNA	\$ 16
battery	\$ 11

Shipping within the continental U.S., via 2nd day service, will run \$10. This includes a box, packing foam and shipping charges. This figure is good for up to ten units.

Those interested in this group purchase should remit monies to the name and address below. Please send non-cash such as personal checks, money orders or the like, as it allows records to be kept much more easily. If less than 100 orders are placed, the checks/money orders will be destroyed, rather than incurring the cost of returning up to 100 of them. Alternately, if you want your check returned in the event of an insufficient number of units ordered, add a dollar bill to cover the cost of an envelope, stamp and my or my wife's writer's cramp which will inevitably result. If the order threshold is reached and an order is placed with Motorola, the \$1 will be returned to you with your order. Please include a very complete address to which the order may be sent. Include your current Internet address and telephone number(s) where you may be reached, as well. I've experienced several Inet addresses which have bounced, by the way, so if you didn't receive a response from me directly, it was attempted.

Send orders to:

Thomas A. Bonomo
8147D Summerset Drive

Colorado Springs, Co. 80920.6123

I can be reached, and have been by several individuals, at:

Telephone: (719)593.9883 Home (evenings, weekends)
(719)592.5105 Office (weekdays)
Internet: tom.bonomo@cxo.mts.dec.com

This message will be posted to the newsgroups, as well.

Thanks for your patience as I've gathered information and responded to each of your requests.

Regards,

Tommy

Specifications and pricing information follows.

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Motorola VP ONCORE SPECIFICATION DATA SHEET

Receiver Architecture

- o 6 channel
- o L1 1575.42 MHz
- o C/A code (1.023 Mhz chip rate)
- o Code plus carrier tracking (carrier aided tracking)

Tracking Capability

- o 6 satellite vehicles simultaneously

Dynamics

- o Velocity: 1000 m/s when altitude less than 18 km
- o Altitude: 18 km for velocities greater than 514 m/s
- o Accelleration: 4 g

Antenna

- o accepts active and passive antennas

Acquisition Time

(TTFF = Time To First Fix)

- o 22 sec. typical TTFF (with current almanac, position, time and ephemeris)
- o 48 sec. typical TTFF (with current almanac, position and time)
- o 2.5 seconds typical re-acquire

Accuracy

- o Position: less than 25 meters, SEP (without SA).
DoD may invoke Selective Availability (SA), potentially degrading accuracy to 100 meters (2 dRMS)

DATUMs

- o 49 std. datums, 2 user defined, default WGS-84

Signal Level

- o TTL

Output Messages

- o Latitude, longitude, height, velocity, heading, satellite tracking status (Motorola Binary Protocol)
- o NMEA-0183 Version 2.00 (GGA, RMC, GLL, GSA)
- o LORAN emulation mode
- o Software selectable

Operating voltage

- o 4.75 - 5.25 VDC, 50 mVp-p ripple

Operating current

- o 230 mA typical @5V, 275 mA max at 5.25V

Standby voltage

- o 2.5 - 5.0 VDC

Standby current

- o 60 ua max

Dimensions

- o 2.00" x 3.25" x .64" (50.80mm x 82.55mm x 16.26mm)

Weight

- o 1.9 oz. (53.9g)

Connectors

-
- o Digital: 10 pin (2 x 5) header on .100" centers
 - o RF: right angle OSX (sub-miniature snap-on)

Operating Temperature

-
- o -30 - +85 degrees C (without on-board battery)
 - o -20 - +60 degrees C (with on-board battery)

Storage Temperature

-
- o -30 - +85 degrees C (without on-board battery)
 - o -20 - +60 degrees C (with on-board battery)

Humidity

-
- o 95% RH, non-condensing

Vibration

-
- o 7.7 g, random (survivability)

MTBF

-
- o >61,000 hours (estimated)

Optional features

-
- o Lithium battery
 - o Low Noise Amplifier
 - o Real Time Clock

Pricing (includes Colorado state sales tax)

VP Oncore engine	\$268
Active Antenna	\$ 70
Cable to antenna	\$ 22
Low Noise Amp	\$ 16
Lithium Battery	\$ 11

Development Software

1st option \$270
includes:
Raw code phase,
disc data,
smooth sat time,
carrier phase

2nd option \$215
includes:

above without
carrier phase

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////////////////////////////////////

Specifications for Trimble SVeeSix GPS engine

Model: SVeeSix-CM2

General

L1 Frequency, C/A code (SPS), 6 channel, continuous tracking receiver

Update Rate

NMEA - 1Hz

Accuracy

Position: 25m without SA
Velocity: 0.1m/s without SA
Time: 1 us (nom)

DGPS Accuracy

Position: 2m to 5m (2 sigma)
Velocity: 0.1m/s
Time: 1 us (nom)

Acquisition (typ)

Cold Start: 2 to 5 minutes
Warm Start: 50 sec with time upload
Hot start: 30 sec with time upload

Reacquisition

<2 sec

Dynamics

Velocity: 500 m/sec max
Acceleration: 4g
Jerk: 20m/sec³

Environmental Specs.

Operating temp: -10C to +60C
Storage temp: -55C to +100C
Vibration: 0.008g²/Hz 5Hz to 20Hz
0.05g²/Hz 20Hz to 100Hz
-3dB/octave 100Hz to 900Hz

Operating Humidity: 5% to 95% RH non-condensing @+60C
Altitude: -400m to +18000m

Physical Characteristics

Dimensions: 3.25" x 1.83" x 0.58"
Weight: 1.3 oz. (36.4g)
Connectors: RF: SMB, I/O: 8 pin (2x4), 2mm header

Technical Specifications

Prime power: +5Vdc (-3% to +5%)
Power consumption: 280 ma, 1.40 watts
Backup power: +3 to +5 Vdc
Backup consumption: 1 uA @3V and +25C (nom)
Serial port/1PPS: CMOS TTL
Protocol options: TSIP @9600 baud, 8-0-1
NMEA 0183 v2.0 @4800 baud, 8-N-1
TAIP @4800 baud, 8-N-1

NMEA messages: Standard: GGA, VTG
Optional: GGA, GLL, VTG, ZDA, GSA, GSV, RMC

Pricing (includes Colorado state tax)

SVeeSix CM2, DGPS capable \$321
Antenna (includes cable) \$118

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From gjones@tenet.edu Sat Jun 4 00:03:37 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP
id AA106067 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Sat, 4 Jun 94 00:03:37 -0500
Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id AAA08259 for tapr-bb@tcet.unt.edu; Sat, 4 Jun 1994 00:04:04 -0500
From: Greg Jones <gjones@tenet.edu>
Message-Id: <199406040504.AAA08259@Kay-Abernathy.tenet.edu>
Subject: Upcoming PSR Deadline
To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)
Date: Sat, 4 Jun 1994 00:04:04 -0500 (CDT)
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 995
Status: RO

The next PSR, Issue #54, deadline will be sometime the first of July.

If you have a technical report, operational news, or something of interest, please send it to Bob Hansen, N2GDE, at psr@tapr.org

TAPR has made the commitment to make space available in the PSR for any regional group that wants to present or discuss what they are doing currently. If you are in a regional packet group, please pass this along to your newsletter editor or whoever can take advantage of this. Sharing information between the regional group is important in understanding what is happening as a national effort in the US.

If you have done something technical, please take some time and write it up. While you might think the information is not very useful, someone else in TAPR is probably thinking or trying to do the same thing and will find your work helpful. Even better, your work might spark someone else to do something.

You now have a month to go out and do a little writing :-)

Cheers- Greg

From gjones@tenet.edu Fri Jun 3 12:26:02 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA169568 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Fri, 3 Jun 94 12:26:02 -0500
Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id MAA06048 for tapr-bb@tcet.unt.edu; Fri, 3 Jun 1994 12:26:28 -0500
From: Greg Jones <gjones@tenet.edu>
Message-Id: <199406031726.MAA06048@Kay-Abernathy.tenet.edu>
Subject: TAPR Listserv Procedures
To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)
Date: Fri, 3 Jun 1994 12:26:27 -0500 (CDT)
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 1968
Status: R0

INFORMATION ON TAPR MAIL GROUPS
6/3/94

There have been several questions on how the TAPR lists are currently being run.

All three lists, NETSIG, BBSSIG, and TAPR-BB are moderated lists.

I read each list before allowing processing to happen. This is to reply to messages about join, unjoin, test, and so on by hand instead of having them posted to the group. Any message dealing with direct content is not being changed and is being posted as sent. The purpose of the moderation is to eliminate those incorrectly addressed messages. tapr-bb (this list) is a lot more tight than the others - since this is not an open discussion group, but one regarding posting of TAPR information for distribution. I reply to most messages sent to it that should normally be sent to TARP@TAPR.ORG.

Last weekend, we changed the listserv in order to eliminate our BOUNCED MAIL problem. The change that resulted has mail being sent from different accounts than those of the postings. Messages sent to netsig or now sent from net_sig. A reply-to line is included in all messages, which most mailer programs handle correctly. If you do post to the wrong address, the mail eventually get sent to me by the listserv program and I send a message back to the sender regarding the problem.

I check the listserv 2 or more times a day and then start the process up. The listserv script (handling join, unjoin, help, etc) runs throughout the day by itself. Only the group lists run at different time, based on when I start them up.

If you have any questions, please send me e-mail at gjones@tenet.edu.

Greg

President -- Tucson Amateur Packet Radio Corp

TAPR Office (817) 383-0000 | Internet: gjones@tenet.edu

From gjones@tenet.edu Tue May 31 20:22:28 1994
Received: by tcet.unt.edu (5.61-AIX-1.2/1.0) from Kay-Abernathy.tenet.edu with SMTP

id AA168445 (for tapr-bb, from gjones@tenet.edu/gjones@tenet.edu); Tue, 31 May 94 20:22:28 -0500

Received: (from gjones@localhost) by Kay-Abernathy.tenet.edu (8.6.7/8.6.6) id UAA10293 for tapr-bb@tcet.unt.edu; Tue, 31 May 1994 20:22:56 -0500

From: Greg Jones <gjones@tenet.edu>

Message-Id: <199406010122.UAA10293@Kay-Abernathy.tenet.edu>

Subject: PSR #54

To: tapr-bb@tcet.unt.edu (TAPR-BB mailing)

Date: Tue, 31 May 1994 20:22:55 -0500 (CDT)

X-Mailer: ELM [version 2.4 PL23]

Content-Type: text

Content-Length: 739

Status: R0

PSR #54 was mailed last Firday.

If you are a member of TAPR, please send me e-mail (gjones@tenet.edu) when you receive your newsletter. We are trying to get an idea on the time it takes for 2nd class mail to be distributed to the membership.

That is e-mail to me: gjones@tenet.edu. Please do not reply back to the tapr-bb group.

Also - I would welcome any comments on this issue.

Cheers - Greg

President -- Tucson Amateur Packet Radio Corp

TAPR Office (817) 383-0000 | Internet: gjones@tenet.edu
